

REMARKS

This reply is submitted in response to the Office Action dated April 13, 2007. Claims 1-4 and 7-78 are pending in the application and claims 1-4, 7-16, 20 and 23-78 stand rejected. Claims 17-19, 21 and 22 have been withdrawn from consideration by the Examiner.

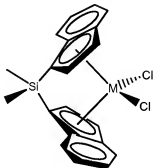
Claims 1-4, 7-11, 14-22, 30-43, and 67-78 have been cancelled. Cancellation of claims 1-4, 7-11, 14-22, 30-43, and 67-78 is not an admission of non-patentability. Applicant has simply cancelled claims 1-4, 7-11, 14-22, 30-43, and 67-78 without prejudice and amended the claims as shown to place the application in condition for allowance and/or to reduce issues for appeal.

Reconsideration of the claims is respectfully requested.

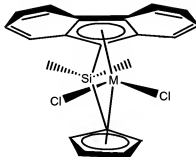
Claims 1-4, 7-16, 20, 24-29 and 34-78 stand rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C 103(a) as obvious over U.S. Patent No. 5,770,755(Schertl). Further, claims 1-4, 7-16, 20 and 23-78 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Schertl .

Applicant respectfully disagrees. As discussed previously, Schertl does not teach, show or suggest bridged, mono cyclopentadienyl groups having olefinic unsaturated ligands, as recited in claim 24 and those dependent therefrom. In claim 24, "J is a heteroatom ligand comprising a Group-14-15 atom and 0-2 of R" " therefore, the claimed composition is a mono cyclopentadienyl compound. Schertl does not disclose mono cyclopentadienyl compounds. At column 4 lines 35 to 63 Schertl discloses various *bis*cyclopentadienyl compounds, **NOT** mono-cyclopentadienyl compounds. Biscyclopentadienyl compounds (nicknamed bis-Cp compounds) are compounds having two cyclopentadienyl groups attached to the metal, not just one. Indenyl groups and fluorenyl groups are also considered cyclopentadienyl groups because they are derivatives of cyclopentadiene. (Indene has one six membered aromatic ring stuck to the Cp ring and Fluorene has two six membered aromatic rings stuck to the Cp ring). Please refer to the pictures below. Compound A is a Bis-Cp compound because two indenyl groups are attached to the metal. Compound B is a Bis-Cp compound because a cyclopentadienyl group and a

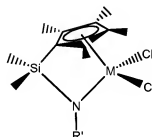
fluorenyl group are attached to the metal. Compound C is NOT a bis-Cp compound because one cyclopentadienyl group is attached to the metal and in place of the other "Cp group" a heteroatom moiety has been inserted. These compounds are called "mono-Cp compounds." In each of the compounds below the bridging group, T, is the $(\text{CH}_3)_2\text{Si}$ group.



Compound A



Compound B



Compound C

Thus, when we turn to Schertl's column 4 we see that each compound listed has two Cp groups (remembering that Cp groups are cyclopentadienyl, indenyl and fluorenyl). For example the first compound has two fluorenyl groups, the second compound has a fluorenyl group and a cyclopentadienyl group, the third compound a fluorenyl group and a cyclopentadienyl group, and so on. All of these compounds are bis-Cp compounds, not mono-Cp compounds. Applicant's claims requires at least one mono-Cp compound. J in the formulas in the claims is the heteroatom moiety that replaces the second Cp group and T is the bridging group. In the event the Examiner would like more information on the differences between bis-Cp and mono-Cp compounds, perhaps a phone interview with the inventor would be helpful? In light of the above, Applicant gently submits that the Examiner is in error with regard to the existence of mono-Cp compounds in Schertl. Withdrawal of the rejection and allowance of claim 24 and those dependent therefrom is respectfully requested.

Regarding base claim 44 and those dependent therefrom, Schertl does not teach, show or suggest a *bridging group*, T, having olefinic unsaturated ligands as recited those claims. First, L^a , L^b and J are not bridging groups as understood in the metallocene art. Note that he claims require that T bridge L^a and L^b or L^a and J. Second, Schertl's vinyl groups are all on the Cp moieties not on the bridges. Therefore, Schertl cannot anticipate or make obvious the claimed

subject matter of base claim 44 and those dependent therefrom. Allowance of claims 44-55 is respectfully requested. In the event the Examiner still disagrees, perhaps a phone interview with the inventor would be helpful to explain?

Claims 1-4, 7-16, 20 and 24-78 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,169,818 (Antberg).

Applicant respectfully disagrees. Antberg does not teach, show or suggest bridged, mono cyclopentadienyl groups having olefinic unsaturated ligands, as recited in claim 24 and those dependent therefrom. In claim 24, "J is a heteroatom ligand comprising a Group-14-15 atom and 0-2 of R" " therefore, the claimed composition is a mono cyclopentadienyl compound. Like Schertl, Antberg does not disclose *mono* cyclopentadienyl compounds. Withdrawal of the rejection and allowance of claim 24 and those dependent therefrom is respectfully requested.

Regarding base claim 44 and those dependent therefrom, Antberg does not teach, show or suggest a bridging group, T, having olefinic unsaturated ligands as recited those claims. Antberg makes no mention of bridging group between the cyclopentadienyl groups having olefinic unsaturated ligands. Therefore, Antberg cannot anticipate or make obvious the claimed subject matter of base claim 44 and those dependent therefrom. Allowance of claims 44-55 is respectfully requested.

Claims 1-4, 7-16, 20 and 24-78 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Antberg in view of Schertl as cited above. Applicant respectfully traverses the rejection.

Both Antberg and Schertl have been discussed and distinguished above. Neither reference teaches, shows or suggests bridged, *mono* cyclopentadienyl groups having olefinic unsaturated ligands, as recited in claim 24 and those dependent therefrom. Also, neither reference teaches, shows or suggests a bridging group having olefinic unsaturated ligands, as recited in claim 44 and those dependent therefrom. Therefore, any combination of those references does not arrive at the claimed invention. Withdrawal of the rejection and allowance of the claims is respectfully requested.

Claims 1-4, 7-16, 20 and 23-78 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Antberg as cited above in view of U.S. Patent No. 5,714,425 (Chabrand).

Applicant respectfully traverses the rejection. Regarding base claims 24 and 44 and those dependent therefrom, neither reference teaches, shows or suggests bridged, *mono* cyclopentadienyl groups having olefinic unsaturated ligands, as recited in claim 24 and those dependent therefrom. Also, neither reference teaches, shows or suggests a bridging group, T, having olefinic unsaturated ligands, as recited in claim 44 and those dependent therefrom. Therefore, any combination of those references does not arrive at the claimed invention. Withdrawal of the rejection and allowance of claims 24 and 44 and those dependent therefrom is respectfully requested.

Regarding base claim 23 and those dependent therefrom, the Examiner admits that Antberg makes no mention of a bifunctional metallocene, and relies on Chabrand to provide this teaching so that a combination of Antberg and Chabrand can be used to make obvious the claimed subject matter. To the contrary, Chabrand discloses a pre-polymerization process for making polyethylene that utilizes vinyl unsaturations on the Cp rings of "one or more metallocene." Chabrand never discloses or exemplifies a bifunctional metallocene as required in the claims, and Chabrand makes no mention of "two or more catalyst precursors" each having "a different Group 4 metal," as required in base claim 23 and those dependent therefrom. Therefore, a combination of Antberg and Chabrand does not teach, show or suggest every limitation of claim 23. For at least this reason, withdrawal of the rejection and allowance of the claims is respectfully requested.

Having addressed all issues set out in the office action, Applicant respectfully submits that the pending claims are now in condition for allowance. Applicant invites the Examiner to telephone the undersigned attorney if there are any issues outstanding which have not been addressed to the Examiner's satisfaction. The Commissioner is hereby authorized to charge counsel's Deposit Account No. 05-1712, for any fees, including extension of time fees and excess claim fees, required to make this response timely and acceptable to the Office.

Appl. No.: 10/693,786
Atty. Docket No.: 2002B181B
Amndmt. dated December 21, 2007
Reply to Office Action of August 20, 2007

Respectfully submitted,

December 21, 2007 _____
Date

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